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ABSTRACT

Networking has always been regarded by librarians as an essential tool to facilitate the timely provision of information. Teacher librarians have often been vocal supporters of networking in theory, but in practice networking has been rather a failure. The first part of this paper provides a historical overview of the rationale for networking and the reasons for its lack of effectiveness. The second part of the paper provides an analysis of the way that Information Technology (IT) can change the network landscape. It is argued that IT has the potential to solve many of the problems associated with traditional network models and is, therefore, able to sustain the vision of access without ownership. The new challenges of funding, contributing to the information pool, a shared vision for library and information services, and the exponential growth of information in the electronic information environment are discussed. Existing and potential applications of the Internet at the local, national, and international levels are also noted. (Contains 10 references.) (Author/AEF)

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Sustaining the Vision Through Networking... (and a Few Challenges Too!)

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Abstract
Networking has always been regarded by librarians as an essential tool to facilitate the timely provision of information. Teacher librarians have often been vocal supporters of networking in theory but in practice networking has been rather a failure. The first part of this paper provides a historical overview of the rationale for networking and the reasons for its lack of effectiveness.

The second part of the paper provides an analysis of the way that information technology (IT) can change the network landscape. It is argued that IT has the potential to solve many of the problems associated with traditional network models and is, therefore, able to sustain the vision of access without ownership. Like all good things, however, the changing landscape brings with it a multitude of old and new challenges. A number of these are discussed in detail, including potential and existing applications of the Internet at the local, national and international levels.

For the purposes of this paper we argue that teacher librarians (TLs) involved in networking should reflect two broad issues. The first is a need for professional networking. That is networking for the common professional good; networking that addresses the problem of professional isolation. The second is a need for information exchange. This networking relates to the professional role of the TL, and provides the means by which library services are able to draw upon information regardless of geographic location, time of day, or even legal ownership. while we highlight these two forms, we are quick to point out that the two are not mutually exclusive.

There is an old saying that success in life is less of a function of what you know than it is a function of whom you know. We can all testify to the veracity of this while at the same time noting that technical knowledge is also very important. The who you know principle lies behind the success of many professional clubs and associations. The demand for places in the most prestigious private schools is partly a response to perceptions about paying for quality education but just as much (if not more so) it is about market positioning. Parents place their children in certain schools because that is where the rich and famous send their children. The sons and daughters of the rich and famous become the rich and famous of tomorrow. Through the sharing of time and space "ordinary" students are able to forge important links with the powerbrokers of tomorrow. As long as it is perceived that future leaders attend such schools the prophecy is self fulfilling.

Personal or professional networking is powerful because of its very simplicity and because it delivers. In recent decades business dynasties such as Amway International have been forged on the network principle. If you know a powerbroker, it is likely that you know a networker.

In library terms networking has made particular sense ever since it became obvious that no one library could hope to cater for the information needs of sophisticated information users. The school library collection is not just a picture of those information resources that are housed within a school but includes those mechanisms that facilitate the delivery of information from outside sources. Quality information access is the TL's vision. Developing links, arrangements and services with other libraries and information agencies to gain and improve access to information to best meet the needs of clients, in the most efficient and effective manner, sustains the teacher librarian's vision. At this level the need for networking is clear.

Historically, networking has come in one of four types (Sinclair 1973; Evans 1987). These cooperative activities include exchange, pooling, dual service and service center, and are shown diagrammatically below. Networking has always been regarded by librarians as an essential tool to facilitate the timely provision of information. The success or failure of each of these network types, however, depends largely on the "proportionality condition" of each of the participants - this

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refers to the phenomenon where "each participant wishes to gain advantage in proportion to the value of its inputs" (Sinclair 1973: 181).

Type A is the exchange model, in which information is exchanged between two libraries. Some of the common problems for teacher librarians when using Type include:

- guaranteeing availability - both parties may need a resource at the same time
- trust and responsibility for loss and replacement - who pays for a lost resource?
- both collections select the same resources, rather than complementary resources - the collective pool is not diverse
- trust and responsibility for developing particular subject areas to support both schools - are we equally good at finding (selecting) new materials?
- incompatible budget allocations - is there an equality in financial costs and resource benefits in this partnership?

Type B is "a multilateral development" of Type A. Sinclair (1973: 183) refers to this as the pooling model, where more than two libraries or agencies contribute to and draw from a pool of information or resources. Common problems encountered by teacher librarians using this model are:

- ownership - if the network disbands, who owns what?
- trust and responsibility - do we trust other schools to look after resources?
- ease of access - is there an effective and efficient courier/delivery service?
- lack of topic planning in schools - to ensure required resources are reserved in advance
- guaranteeing availability - more than one participant is competing for the same resources at the same time, or is reluctant to return resources to the pool before the due date.

Type B can work well if the pool is managed effectively by one participant who has strict control of the circulation and delivery processes, and all schools agree to organize teaching units around access to resources.

Type C, dual service, is a model where "two or more participating libraries take advantage of the facilities of one of the participants to produce a common output". (A union list or catalogue for example.) Problems faced by participants include:

- unequal contribution of resources - how does one develop a fair charging system?
- the level of efficiency and expectation differs among members
- detailed policies and procedures are required to solve disputes
- silent partners rely on the existence of others who have the expertise and resources that allow involvement
- members often wait for someone else to do the work - the creation of the common output can be very slow.

The fourth and final traditional model is Type D, in which "a number of libraries employ the services of a facilitating participant to input and process materials for individual purpose" (Sinclair 1973: 182). An Australian example of Type D for teacher librarians is the Schools Catalogue Information Service (SCIS). The members of SCIS, the Australian state and territory education departments, together with the Catholic Education Office and the Independent Schools, each contribute to the Australian SCIS database of cataloguing records. Individual schools can then buy marc records which are integrated into their library automation systems. Traditionally "user pays" services such as these were considered too expensive, however, this service costs a few cents per record, whereas copy of original cataloguing by a teacher librarian could cost several $s per item in salary time. One problem that still exists with the service center networking model is the challenge of catering for different local needs - SCIS records may need to be enhanced to reflect the local curriculum.

These traditional models have increased the accessibility of information by increasing awareness of the existence of information and where it can be located. The traditional models also address the issue of availability of information: the ability of the user to have information to

hand at the time of need. However, success in the area of availability has continued to be problematic. Members are not usually of equal size - requests often go to the largest members as small members are not able to provide adequate support. The cost of document delivery has often been too expensive, particularly for small libraries with small budgets.

TLs who have gone down the traditional network path have come up against a range of difficulties. Joining a network involves careful consideration and planning and, therefore, the allocation of appropriate resources. For small-sized participants this overhead might be relatively substantial.

In addition to the problems of document delivery (which in the case of school libraries might include the general problem of physical location, timely delivery and the more specific problem of who delivers), other problems include:

- the lack of clear goals of a network and differing expectations of participants
- the question of ownership and the safe keeping of documents
- competing needs and demands among network members
- unequal divisions of labor
- funding and staffing the network
- differing degrees of efficiency among participants.

A further significant problem that has bedeviled traditional network models has been the fact that they have depended for their success very much upon the goodwill of personalities rather than on the existence of formal agreements and policies. This has meant that their success has been very much generational rather than permanent.

Advances in computer and telecommunications technology, and their information and library applications have changed the network landscape. Information technology (IT) has the potential to solve many of the problems associated with traditional network models and is, therefore, able to sustain the vision of access to information without ownership. Physical location is a critical factor in the efficiency and effectiveness of each of the four traditional models, in terms of time and delivery. In an electronic information environment, physical location is less important - in fact, people can access information without needing to know where the information is located!

Electronic information is breaking down the traditional boundaries and barriers which have existed between different libraries and information agencies. The Internet is the world's largest electronic network. Byrne (1994: 13) suggests that the Internet provides a "useful infrastructure for setting up resource sharing... that will have immediate and practical results". Membership of this network is global - the problem of sheer distance has been overcome. Many electronic information sources and services exist that can potentially meet the information needs of the school community and TLs must ensure that their school becomes a member of this network. Electronic information networks together with the availability of search engines can extend the TL's vision of access without ownership into the 21st century.

Each of the four traditional networking models still apply in the electronic information environment. The exchange model is characteristic of e-mail and Internet Relay Chat (IRC) networking facilities. E-mail is a system of exchange, whereby messages are transferred between computers and stored on them. this allows users to send messages and small documents electronically to individuals or groups of individuals, and can form the basis of electronic conferencing and discussion groups (Clyde 1993: 26). E- mail is usually the first service people use vial the Internet to electronically communicate with others. It is fast, with messages usually delivered within minutes of being sent. A disadvantage of e-mail, however, is that it can only transmit text messages, therefore, files formatted by word processor, spreadsheet and other programs cannot be sent via E-mail.

Internet Relay Chat allows teachers and students to engage in conversation with people in the local area or around the world in real time. Information exchange occurs instantly, hence, access is at the point of need. Common problem with Type A networking are reduced because participants are not competing for the same information. Rather, all participants can receive a copy of the same information or file at one time. Individual members do not need to develop particular areas or topics to support other schools or be responsible for particular information. The formality of selecting and storing material for all is reduced - sharing information is less

formal. The time and cost of delivery is negligible.

Three problems still exist, however, for information exchange within an electronic context. Guaranteeing the availability of active participants using IRC can be problematic for schools, particularly for schools across time zones. Efficiency of individual members also remains a problem for e-mail information exchange. Some participants may not regularly check their e-mail, and this lack of response to e-mail requests can be frustrating for members. Loss of electronic information can occur, some of which may be irretrievable or irreplaceable.

Pooling is a popular networking facility in the electronic environment. Listservs, newsgroups and bulletin boards provide forums for students and teachers to discuss issues relevant to particular topics. Information agencies and community interest groups can establish electronic links with schools. Ideas and information are pooled and shared by participants. A listserv can provide a rapid exchange of relevant information among professionals with similar professional information needs. Professional isolation of teachers with special information needs are reduced. Listservs require participants to subscribe to these mailing lists as official members. Members also have access to the listserv archives - discussion on previous topics can be searched and retrieved - an excellent source of information!

Newsgroups are electronic discussion groups, which provides participants with access to an open information network where articles are posted and retrieved by any "Internet cruiser". They do not require formal membership. Information posted to a bulletin board can be in the form of original items, or "follow-ups" to existing items which creates discussion and is, therefore, potentially a "conferencing system" (UNL 1992: 17). All newsgroups are organized into categories according to a hierarchy, which allows easy browsing of newsgroup lists and basic identification of the nature or topics of each newsgroup.

Members of these electronic forms of pooling do not encounter the common problems of traditional forms of Type B, such as ownership; trust and responsibility; ease of access, and effective and efficient delivery; topic coordination among schools, and guaranteeing availability via reservations to ensure material required is available, is no longer a problem. Likewise, competition for the same information at any one time is no longer an issue. Relatively free and ready access is available to every participant, all of the time.

In an electronic environment, the dual service model is characteristic of workgroup software programs, on-line learning networks and source lists. All participants use these facilities to produce a "common output". The advantage of dual service networks is the qualitative element of input, creating a value- added service. Workgroup or shareware software programs create a networked production environment, where participants share ideas, and collaboratively edit and publish material from their own workstations. Participants are not required to be in the same room, building, or even the same country, or available at the same time as their colleagues, during the production of common output.

On-line learning networks, both global and local, coordinate the linking of schools to implement joint student projects as part of the school curriculum (Choldin 1995: 49). Using a facility such as I*EARN Australia, part of a global telecommunications educational network, allows teachers and students to implement educational projects with peers in Australia and overseas. On-line learning networks create electronic learning communities, where participants contribute to a collaboratively defined information poll and publications. On-line role playing games where players talk and act using textplay, MUD's for example, are also a form of dual service networking.

Electronic source lists are a dual service facility. TLs will need to create school-based indexes of recommended information sources and services that are available on the Internet. TLs in local and regional networks can collaborate in a curriculum-based "quality control" service. The creation of the Infofilter Project in the UK is a good example of an electronic version of this dual service model (Collins 1995). This dual service involves a group of librarians evaluating full-text information services on the Internet using evaluation criteria similar to that used to evaluate reference sources. The eventual goal of this project is to provide an index of recommended "quality" home pages on the World Wide Web (WWW). With electronic dual services, however, TLs are still faced with the problems of all participants contributing unequally, and at differing levels of efficiency.

All traditional networks are based on a contractual agreement (formal or informal) and

reciprocal relationships between network members, however, new forms of contractual agreements and relationships have emerged in the electronic environment which means that new forms of networks may be emerging. Relatively free and ready access to information has become an "unwritten rule" for the Internet community. The contractual agreement being that all participants have a right and responsibility to contribute to, as well as access information networks. While a reciprocal relationship exists, it is not a direct exchange between two distinct parties, but rather an honorary "bartering system" where information is provided for all, and all access sources no matter where they are stored. While a global information pool exists, information is not centrally housed or located - individual members are responsible for providing access of their information to others.

Anonymous FTP hosts, remote login facilities and World Wide Web sites are examples of a possible fifth model of networking. These facilities are another type of service center. Remote login facilities access thousands of databases, both locally and globally, while Anonymous FTP hosts provide access to thousands of public files across the Internet. Archie is a database service that indexes and catalogues fields on Internet hosts, keeping track of all files freely available to the public via FTP. Schools can retrieve vast amounts of information quickly and cheaply, in a more searchable format, and can store these in folders on file servers for future use - essentially, building an electronic library of journals, books and images to resource the school's curriculum. A major advantage for publishers using these services is the wider distribution of their materials.

WWW sites are network service centers. Clients do not need to know the location of a document - browsing software searches the Web using keywords to locate specific information. The use of hyperlinks (via HTML) allows access to additional related information. An advantage of information on Web sites is that it is not restricted to text, multimedia information can be accessed, retrieved and stored to supplement a school's multimedia CD-ROM collection.

While IT solves many of the problems associated with traditional network models and sustains the vision of access without ownership, the changing landscape brings with it new challenges. These include funding, contributing to the information pool, a shared vision for library and information services, and the exponential growth of information in the electronic information environment.

Funding

Networking is not about saving money! For schools to access electronic information networks, adequate funding is required. This includes the initial cost of establishing an IT network that will meet the educational, technological and information needs of the school community, as well as its maintenance and eventual upgrading. As new information network services are developed, the school's IT requirements will grow and require more funding. For a school's IT network to run efficiently and effectively, time and resources in the form of technical and curriculum personnel are required to support the network - this cost must be included in the school's IT plan, it must not be an afterthought!

Contributing to the Information Pool

Participants must be contributors as well as users of the information pool. Networking requires input - a network does not exist without information exchange. The phenomenon of "lurking" on listservs, newsgroups and bulletin boards is a problem with electronic networks. Lurking is not a particularly productive pastime - many "active" hands make light work! TLs need to contribute to e-mail debates, making suggestions and providing feedback to those seeking it, and sharing ideas and strategies with their electronic community. Some participants may feel they have nothing important to contribute, while others feel they have much to contribute, when really they are creating electronic "noise"! TLs must approach electronic networks professionally, as they do with all other facets of their work.

A Shared Vision

As managers of school information services. TLs must develop a clear vision of what future information services the school library can provide and to what extent these will complement or replace traditional sources. It is the responsibility of TLs to ensure that schools become active participants of electronic networks - and not be isolated from what's happening "out

there". To succeed TLs require the active support of the Executive staff who must ensure the development of appropriate policies and the allocation of resources.

Electronic networking between libraries and information agencies will soon become standard. Before searching around the globe for specific information and services, it will be essential to first check your own "backyard" - each library or information agency will still need to ensure that required information is accessed economically. Efficient and effective delivery (the use of postscript or UNIX files for example) will also be a major factor in information access.

Exponential Growth of Information

The information pool is growing exponentially, and the advent of electronic networks has contributed to the generation of new information. The problems of quantity and quality are a challenge for TLs. It is difficult for users to identify what information is available to meet a specific information need. there are so many information sources and services available that sorting through the potential services is now becoming a chore, let along sifting through the information retrieved. since there is no way of knowing how much and what is "out there", we are now faced with the problem of not knowing whether what we have located is the best possible information to meet our needs.

The WWW is currently a source of frustration for information seekers, with underdeveloped sites promising information via home pages and users accessing a blank screen. TLs will need to develop "quality control" methods, by providing an Infofilter-type service network, or creating WWW "customized" Key Learning Area (KLA) Home Pages to link useful information on particular Websites to specific curriculum areas. These measures will be necessary to address the quantity and quality problems associated with electronic information networks.

The TL's ability to expand school library resource center services through networking is underpinned by more subtle and perhaps more important layers of personal networking. The success of the public face of networking depends very much on these other levels of networking. Networking between the TL and teaching colleagues is a precondition for the success of network arrangements. The formation and maintenance of network is largely dependent on the good will of the school's key decision makers. The ongoing relationship that the teacher librarian has with colleagues and the influence that she/he has on the school's decision making processes are cornerstones of success. The delivery of quality library and information services are very much dependent upon a client focus - a focus that enables the TL to know the known and unarticulated needs of client groups. Such knowledge is a function of the quality of the networking that the TL does with colleagues - both as individuals and as part of a wider group.

To the extent that key school personnel (and in particular the principal) understand the role of the TL as an information specialist they are able to empower him/her to provide appropriate services. To this end the networking that the TL undertakes with the school executive is of paramount importance. When this group identifies the TL as a provider of information that enhances or enables effective corporate decision making they will perceive the TL as indispensable.

TLs cannot allow themselves to be professionally isolated. They must network to share and learn. Likewise, schools cannot allow themselves to underutilize the power of information networks. Both forms of networking come at a cost, but both provide the potential for people to break through the glass ceiling.

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